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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/253,048

02/19/1999

YASUHITO INAGAKI

9792909-4094

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04/06/2007

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EXAMINER

MARKOFF, ALEXANDER

ART UNIT

PAPER NUMBER

1746

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
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3 MONTHS

04/06/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

09/253,048

Applicant(s)

INAGAKI ET AL.

Examiner

Alexander Markoff

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 December 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 42-51 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 42-51 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 11/10/06 has been entered.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 42-51 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The claims as amended require the polymer to comprise a molecular weight less than about 1,000,000. Such is not supported by the original disclosure.

The original disclosure does not teach a limitation of a polymer comprising a molecular weight. It is possible that the applicants meant that the polymer comprises a polymer with a molecular weight less than about 1,000,000. However, the original

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disclosure fails support such limitation as well. The original disclosure fails to support limitation of molecular weight less than about 1,000,000.

Further, the claims as amended require contacting without requiring a pretreatment for mixing or dispersing the agent in a liquid.

The original disclosure fails to support such limitation. The original disclosure is silent regarding any pre-treatment for mixing or dispersing of the agent in a liquid. The original disclosure is silent regarding any pre-treatment.

Further, claims require the hydrolyzed polymer being presented in pieces not larger than 3.5 mesh.

The original disclosure fails to support such limitation. The recited size of is disclosed for a high-molecular material prior to processing, not for the hydrolyzed polymer.

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 42-51 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The claims are indefinite because it is not clear from claim 42 how can a polymer comprise a molecular weight. The molecular weight is a property of a polymer, not it's constituents.

The claims are further indefinite because it is not clear whether or not what is referenced by numerals (2)-(4) are parts of the polymer designated by numeral (1).

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

8. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

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1. Determining the scope and contents of the prior art.
 2. Ascertaining the differences between the prior art and the claims at issue.
 3. Resolving the level of ordinary skill in the pertinent art.
 4. Considering objective evidence present in the application indicating obviousness or nonobviousness.
9. Claims 42-51 rejected under 35 U.S.C. 103(a) as being unpatentable over any one of EP 0818474, EP 0818420 and Inagaki et al in view of DE 4444032, Elfine, Monick et al, Horton and Ramirez et al.

This rejection was previously applied to the pending claims and discussed.

As to the newly added limitation "said polymer comprises a molecular weight less than about 1,000,000".

First, such limitation is not supported.

Second, the limitation is not clear.

Third, it is reasonably believed that since the applied documents teach the same polymers this limitation is met. The applied documents teach polymers having molecular weight less than 1,000,000.

As to the newly introduced requirement of contacting "without requiring a pre-treatment for mixing or dispersing said agent in a liquid". Since, the claims recite the pre-treatment as an optional (non-required) step, the teaching of applied documents meets the claimed limitation.

As to the newly introduced limitation requiring providing the agent in a solid state: EP 0818474, EP 0818420 and Inagaki et al teach obtaining the treatment agents in a solid state.

All other limitations were previously addressed and discussed.

Response to Arguments

10. Applicant's arguments filed 11/10/06 have been fully considered but they are not persuasive.

The applicants amended the claims and argue that the amended claims supported by the specification.

This is not persuasive.

The original disclosure does not teach a limitation of a polymer comprising a molecular weight. It is again noted that it is possible that the applicants meant that the polymer comprises a polymer with a molecular weight less than about 1,000,000. However, the original disclosure fails support such limitation as well. The original disclosure fails to support limitation of molecular weight less than about 1,000,000.

The applicants amended the claims and allege that EP 0818474, EP 0818420 and Inagaki et al only teach the polyelectrolytes in a solution state.

This is not persuasive. While the documents teach that the polyelectrolytes are water-soluble and can be used in water or acid solution, they also teach solid polyelectrolytes. See at least Figures 1 in Inagaki et al and EP 0818474. The referenced figures clearly show that the referenced polyelectrolytes are obtained from the dryer as powders.

Moreover, it is further noted, that the claims do not exclude the use of the agents as a solutions. The step (b) recited by the claims requires only contacting "without

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requiring" a pretreatment. Thus, the claims recite the pre-treatment as an optional (non-required) step, but do not exclude such.

The applicants further argue that the applied documents do not teach the agent with acrylonitrile unit and hydrophobic unit.

This is not persuasive because in contrast to the applicants' statement, the applied documents teach acrylonitrile unit and the use of the same acid (sulfuric acid) as claimed to introduce the referenced groups into the agent. See at least, column 4, line 46 – column 5, line 8, column 7, lines 25-56, column 13, line 7 – 38 of Iganaki et al and corresponding parts of EP 0818474; page 3, lines 11-24, page 4, lines 4 of EP 0818420.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alexander Markoff whose telephone number is 571-272-1304. The examiner can normally be reached on Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Barr can be reached on 571-272-1414. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Alexander Markoff
Primary Examiner
Art Unit 1746

AM

ALEXANDER MARKOFF
PRIMARY EXAMINER